

## REMARKS

Applicant will address each of the Examiner's rejections in the order in which they appear in the Office Action.

### Claim Rejections - 35 USC §102

In the Office Action, the Examiner continues to reject Claims 1-5, 17-18, and 26-27 under 35 USC §102(b) as being anticipated by Hartmann (US 4,976,515).<sup>1</sup> This rejection is respectfully traversed.

More specifically, in the Office Action, the Examiner contends that Hartmann discloses the claimed method and that item 2 in Fig. 1 in Hartmann is the claimed liquid crystalline material having a chiral smectic phase. Citing col. 3, lns. 20-25 in Hartman. In reply to Applicants' previous response, the Examiner contends that Hartmann "teaches of a material having a chiral smectic phase as is known." See p. 18 of Office Action. Applicant respectfully disagrees.

Hartmann clearly discloses that item 2 in Fig. 1 is a ferro-electric liquid crystalline material. See e.g. Col. 4, lns. 4-5 of Hartmann. The ferro-electric liquid crystalline material in Hartmann is clearly different and distinguishable from "a chiral smectic C<sub>R</sub> phase" as recited in independent Claims 1-3 of the present application.

While the Examiner states that Hartmann teaches a material having a chiral smectic phase, Applicant respectfully submits that Hartmann fails to clearly teach or suggest a chiral smectic C<sub>R</sub> phase, as is specifically recited in independent Claims 1-3. Furthermore, no support is cited by the

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<sup>1</sup> Applicant notes that there is still no rejection of independent Claim 12 over Hartmann (as Applicant pointed out previously) but a detailed discussion of the claim and Hartmann in the Office Action. In order to advance the prosecution of this application, Applicant will explain herein why Claim 12 is patentable over

Examiner to show that the ferro-electric liquid crystalline material of Hartmann is “well known as having a chiral smectic phase.”

Additionally, in the rejection of Claim 2, the Examiner contends that the claimed feature of "canceling out a spontaneous polarization of the liquid crystal material in a first period" is disclosed in Fig. 3a item Vbl wherein  $-6V < Vbl < 0V$ . Applicant respectfully disagrees and submits that Hartmann fails to teach the claimed feature of "canceling out a spontaneous polarization of the liquid crystal material in a first period" as dipole 21 appears to be aligned in one direction when Vbl is applied. See Fig. 2b and col. 4 in Hartmann.

With respect to the rejection of Claim 3, the Examiner contends that the claimed feature of "applying a voltage of 0V to the liquid crystal material in a first period" is disclosed in Fig. 3a item Vbl wherein  $-6V < Vbl < 0V$ . Applicant respectfully disagrees. Hartmann clearly does not teach this claimed feature since Hartmann specifically teaches that  $Vbl < 0$  (and therefore cannot be a voltage of 0V as specifically recited in Claim 3).

Accordingly, for at least the above-stated reasons, independent Claims 1-3 and those claims dependent thereon are not disclosed or suggested by Hartmann and cannot be anticipated by this reference.

Applicant also has the following comments in response to the Examiner's discussion (and supposed rejection) of independent Claim 12, in order to advance the prosecution of this application, Applicants are amending Claim 12 to clarify the claimed invention. Hartmann does not disclose or suggest the claimed feature of "said liquid crystal material...being connected in parallel to the auxiliary capacitor" of amended Claim 12.

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Hartmann.

Further, the Examiner contends that the feature of Claim 12 of "applying a voltage of 0V to the liquid crystal material in a first period" is disclosed in Fig. 3a item Vbl wherein  $-6V < V_{bl} < 0V$  of Hartmann. Applicant respectfully disagrees. Hartmann clearly does not teach this feature since Hartmann specifically teaches that  $V_{bl} < 0$  and therefore cannot be 0V as recited in Claim 12.

With respect to the Examiner's comments regarding Claim 15, Applicant notes that Claim 15 does not recite "a chiral smectic CF phase" as the Examiner states but instead recites "a chiral smectic C<sub>R</sub> phase."

With respect to the Examiner's comments regarding Claim 38, the Examiner contends that the claimed feature that "said black level is displayed by applying a voltage of 0V to the liquid crystal material" is disclosed in Fig. 3a item Vbl wherein  $-6V < V_{bl} < 0V$  in Hartmann. However, as explained above, Hartmann clearly does not disclose this feature as Hartmann teaches that  $V_{bl} < 0$ .

Therefore, for at least the above-stated reasons, independent Claims 1-3 and 12 and those claims dependent thereon are not disclosed or suggested by Hartmann but are patentable thereover. Accordingly, it is respectfully requested that this rejection be withdrawn.

#### Claim Rejections - 35 USC §103

##### Claims 7-9, 11, 14, 16, 20-22, 24, 25, 29-31, 33 and 34

The Examiner also rejects Claims 7-9, 11, 14, 16, 20-22, 24, 25, 29-31, 33 and 34 under 35 USC §103(a) as being unpatentable over Hartmann in view of Saishu (US 6,069,600).<sup>2</sup> This rejection is also respectfully traversed.

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<sup>2</sup> In this rejection, at page 8 of the Office Action, the Examiner refers to "Yang" but provides no citation with this name. If the Examiner is going to continue this rejection, it is respectfully requested that he provide the citation for this reference and where in the reference is the teaching the Examiner is relying

Each of these claims is a dependent claim. Therefore, for at least the reasons discussed above for the independent claims, these dependent claims are also patentable over the cited references.

Further, Claims 11, 24 and 33 recite that “each of the plurality of active elements is connected in series to an auxiliary capacitor.” The Examiner contends that Saishu teaches an auxiliary capacitor at col. 9, lns. 15-25 and col. 12, lns. 55-60. Applicant, however, could find no such teaching of an auxiliary capacitor, much less the claimed limitation, in Saishu at the Examiner’s citations.

Further, with respect to the rejection of Claim 14, the advantage Hartmann discloses is merely one obtained by using a ferro-electric liquid crystalline material. It does not disclose the claimed feature.

Accordingly, it is respectfully requested that this rejection be withdrawn.

#### Claims 6, 19 and 28

The Examiner also rejects Claims 6, 19 and 28 under 35 USC §103(a) as being unpatentable over Hartmann. This rejection is also respectfully traversed.

Each of these claims is a dependent claim. Therefore, for at least the reasons discussed above for the independent claims, these dependent claims are also patentable over the cited references.

Accordingly, it is respectfully requested that this rejection be withdrawn.

#### Claims 10, 23 and 32

The Examiner also rejects Claims 10, 23 and 32 under 35 USC §103(a) as being unpatentable

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upon.

over Hartmann in view of Verhulst (US 6,069,604). This rejection is also respectfully traversed.

Each of these claims is a dependent claim. Therefore, for at least the reasons discussed above for the independent claims, these dependent claims are also patentable over the cited references.

Further, these claims recite a response time. It is respectfully submitted that neither of the cited references disclose or suggest such a response time.

Accordingly, it is respectfully requested that this rejection be withdrawn.

#### Claim Rejections – 35 USC §102

The Examiner also now rejects Claims 1-5, 10, 17-18, 23, 26-27 and 32 under 35 USC §102(b) as being anticipated by Nito et al. (US 5,214,523). This rejection is also respectfully traversed.

More specifically, while the Examiner states that Nito teaches a material having a chiral smectic phase, Applicant respectfully submits that Nito fails to clearly teach or suggest a chiral smectic C<sub>R</sub> phase, as is specifically recited in independent Claims 1-3.

With respect to the rejection of Claim 2, the Examiner contends that the claimed feature of "canceling out a spontaneous polarization of the liquid crystal material in a first period" is disclosed in Nito. Applicant respectfully disagrees as Nito appears to only disclose a chiral smectic C at the temperature used in the display in Fig. 8.

Accordingly, for at least the above-stated reasons, independent Claims 1-3 and those claims dependent thereon are not disclosed or suggested by Nito and are patentable thereover. Therefore, it is respectfully requested that this rejection be withdrawn.

## Claim Rejections - 35 USC §103

### Claims 12-13

The Examiner also rejects Claims 12-13 under 35 USC §103(a) as being unpatentable over Nito et al. in view of Yamamoto et al. (5,617,229). This rejection is respectfully traversed.

More specifically, it is respectfully submitted that the cited references do not disclose or suggest the claimed feature of "said liquid crystal material...being connected in parallel to the auxiliary capacitor" of amended Claim 12.

Further, in the Office Action, the Examiner admits that Nito does not disclose the auxiliary capacitor being connected in series to each of the plurality of thin film transistors. The Examiner then cites Yamamoto and references a "ferroelectric matrix." It is not understood what is meant by a "ferroelectric matrix" or what parts in Yamamoto show this feature. Further, Claim 12 does not recite a "ferroelectric matrix." Therefore, if the Examiner is going to continue this rejection, it is respectfully requested that the Examiner provide a detailed explanation as to what this term means, its relation to the rejection and where it is shown in Yamamoto.

With respect to Claim 15, Nito fails to clearly teach or suggest a chiral smectic C<sub>R</sub> phase, as is specifically recited in the claim.

Accordingly, it is respectfully requested that this rejection be withdrawn.

### Claims 7-9, 11, 14, 16, 20-22, 24, 25, 29-31, 33 and 34

The Examiner also rejects Claims 7-9, 11, 14, 16, 20-22, 24, 25, 29-31, 33 and 34 under 35 USC §103(a) as being unpatentable over Nito in view of Saishu . This rejection is also respectfully traversed.

Each of these claims is a dependent claim. Therefore, for at least the reasons discussed above for the independent claims, these dependent claims are also patentable over the cited references.

Further, Claims 11, 24 and 33 recite that “each of the plurality of active elements is connected in series to an auxiliary capacitor.” The Examiner contends that Saishu teaches an auxiliary capacitor at col. 9, lns. 15-25 and col. 12, lns. 55-60. As explained above, Applicant could find no such teaching of an auxiliary capacitor, much less the claimed limitation, in Saishu at the Examiner’s citations.

Accordingly, it is respectfully requested that this rejection be withdrawn.

#### Claims 6, 19 and 28

The Examiner also rejects Claims 6, 19 and 28 under 35 USC §103(a) as being unpatentable over Nito. This rejection is also respectfully traversed.

Each of these claims is a dependent claim. Therefore, for at least the reasons discussed above for the independent claims, these dependent claims are also patentable over the cited references.

Further, Applicant respectfully submits that Nito does not disclose or suggest the claimed features.

Accordingly, it is respectfully requested that this rejection be withdrawn.

#### New Claims

Applicants are adding new Claims 42-44 herewith. Each of these claims is a dependent claim. Therefore, for at least the reasons discussed above for the independent claims, these dependent claims are also patentable over the cited references.



If any fee should be due for these new claims, please charge our deposit account 50/1039.

#### Information Disclosure Statement

Applicant filed an information disclosure statement (IDS) on February 15, 2006. It is respectfully requested that this IDS be entered and considered prior to the issuance of any further action in this application.

If any further fee is due for this IDS, please charge our deposit account 50/1039.

#### Conclusion

It is respectfully submitted that the present application is in a condition for allowance and should be allowed.

If any further fee should be due for this amendment, please charge our deposit account 50/1039.

Favorable reconsideration is earnestly solicited.

Respectfully submitted,

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